WHAT IS CLAIMED IS:

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2	X	A process for producing a very high viscosity polyalphaolefin product
3		comprising contacting a feed consisting essentially of at least one alphaolefin having from 4 to about 14 carbon atom with an effective
4	\	alphaolefin having from 4 to about 14 carbon atom with an effective
5	'	oligomerizing amount of an acidic ionic liquid oligomerization catalyst
6		maintaining said feed and oligomerization catalyst under preselected
7		oligemerization conditions for a sufficient time to oligomerize the
8		alphaelefin to the polyalphaelefin product, and recovering the high
9		viscosity polyalphaolefin product.
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- 10 2. The process of claim 1 wherein the feed comprises 1-decene.
- 11 3. The process of claim 1 wherein the feed comprises 1-dodecene.
- The process of claim 1 wherein the acidic ionic oligomerization catalyst comprises a first component and a second component, said first component comprising a compound selected from the group consisting of aluminum halide, alkyl aluminum halide, gallium halide, and alkyl gallium halide, and said second component is an ionic liquid comprising a liquid salt containing quaternary ammonium, quaternary phosporium, or quaternary sulfonium.
- The process of claim 4 wherein said first component is aluminum
 halide or alkyl aluminum halide.
- 21 6. The process of claim 5 wherein said first component is aluminum trichloride.
- 7. The process of claim 4 wherein said second component is selected from one or more of hydrocarbyl substituted ammonium halide,

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1		pyridinium halide, alkylene substituted pyridinium dihalide, or
2		hydrocarbyl substituted phosphonium halide.
3	8.	The process of claim 7 wherein the second component is an alkyl
4		substituted ammonium halide containing one or more alkyl moieties
5		having from 1 to about 9 carbon atoms.
6	9.	The process of claim 8 wherein the second component comprises at
7		least trimethyl amine hydrochloride.
8	10.	The process of claim 7 wherein the second component is an alkyl
9		substituted imidazolium halide.
10	11.	The process of claim 10 wherein the second component comprises at
11		least 1-ethyl-3-methyl-imidazolium chloride.
12	12.	The process of claim 4 wherein the ratio of first component to the
13		second component of the oligomerization catalyst is within the range of
14		from about 1:1 to about 5:1.
15	13.	The process of claim 5 wherein the ratio of the first component to the
16		second component is within the range of from about 1:1 to about 2:1.
7	14.	The process of claim 1 including the additional step of hydrogenating
18		the unsaturated double bonds present in the polyalphaolefin product.
9	15.	The process of claim 1 wherein the dimer in the product is reduced to

21 16. A polyalphaolefin product having a viscosity of not less than
22 centistokes at 100°C made using the process of claim 1

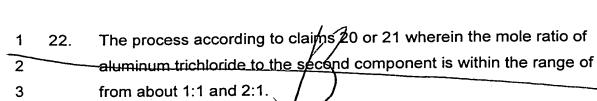
less than 2 weight percent.

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chloride.

1	17.	The product of claim 16 having a viscosity of not less than
2		30 centistokes at 100°C.
3	18.	The product of claim 17 wherein the product contains less than
4		2 weight percent of dimer.
5	18	A process for producing a very high viscosity polyalphaolefin product
6		which is characterized by a viscosity of at least 22 centistokes at
7	·	100°C, said process comprising contacting a feed consisting
8		essentially of at least one alphaolefin having from 4 to about 14 carbon
9		atom with an effective oligomerizing amount of a acidic binary ionic
0		liquid aligomerization catalyst having a first component consisting of ar
1		aluminum halide or an alkyl aluminum halide and a second component
2	·	consisting of a quaternary ammonium selected from selected from a
3		quaternary ammonium halide containing one or more alkyl moieties
4		having from 1 to about 9 carbon atoms or a hydrocarbyl substituted
5		imidazolium halide; maintaining said feed and oligomerization catalyst
6		under preselected oligomerization conditions for a sufficient time to
7		oligomerize the alphaolefin to the polyalphaolefin product; and
8		recovering the high viscosity polyalphaolefin product.
9	20.	The process of claim 19 wherein the acidic binary ionic liquid
20		oligomerization catalyst comprises a first component of aluminum
21		trichloride and a second component of trimethylamine hydrochloride.
22_	21	The-process-of-claim_19-wherein-the-acidic-binary-ionic-liquid-
23		oligomerization catalyst comprises a first component of aluminum

trichloride and a second component of 1-ethyl-3-methyl-imidazolium



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